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Personality Characteristics as Predictors of Institutional Violence among Incarcerated Women

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Abstract
There remains little research about violence in prison among women and the role that personality characteristics take in producing such violence. This study examined the ability of borderline, antisocial, and psychopathic personality pathology to accurately discriminate between first-time female inmates who did and did not engage in institutional violence. Measures used in the sample included the PCL-R, *DSM-IV-TR* symptoms of Borderline and Antisocial Personality Disorder, and the Antisocial Features and Borderline Features scales of the Personality Assessment Inventory. There was a low to moderate base rate of violence in the sample (25% over one year) and low correlations among variables. Receiver Operating Characteristic analyses were conducted to elicit the most useful information from the sample. Psychopathy and measures of antisocial pathology were poor measures of violence discrimination, but measures of borderline symptomotology had moderate ability to discriminate between inmates who did and did not engage in institutional violence. Implications of the data are discussed.

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PERSONALITY CHARACTERISTICS AS PREDICTORS OF INSTITUTIONAL VIOLENCE AMONG INCARCERATED WOMEN

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ABSTRACT

There remains little research about violence in prison among women and the role that personality characteristics take in producing such violence. This study examined the ability of borderline, antisocial, and psychopathic personality pathology to accurately discriminate between first-time female inmates who did and did not engage in institutional violence. Measures used in the sample included the PCL-R, *DSM-IV-TR* symptoms of Borderline and Antisocial Personality Disorder, and the Antisocial Features and Borderline Features scales of the Personality Assessment Inventory. There was a low to moderate base rate of violence in the sample (25% over one year) and low correlations among variables. Receiver Operating Characteristic analyses were conducted to elicit the most useful information from the sample. Psychopathy and measures of antisocial pathology were poor measures of violence discrimination, but measures of borderline symptomotology had moderate ability to discriminate between inmates who did and did not engage in institutional violence. Implications of the data are discussed.

KEYWORDS: Female inmates, violence, personality disorder, psychopathy

INTRODUCTION

Although institutional violence is commonplace among inmates (Gibbons & Katzenbach, 2006), to date few researchers have examined this phenomenon (Wolff, Blitz, Shi, Siegel, & Bachman, 2007). Although it has been suggested that institutional violence is grossly underreported due to prison culture norms regarding "snitching," or reporting assaults to staff members, estimates suggest that, on average, 20% of female inmates will experience physical assault over a 6 month period (Wolff et al., 2007). Because few researchers have examined self-reported institutional violence in women, little is known about the interaction between personality characteristics, diagnoses, and institutional violence.

Antisocial Personality Disorder is characterized by a general disregard for societal norms, whereas Borderline Personality Disorder is characterized by interpersonal and emotional regulation deficits (American Psychiatric Association [APA], 2000). Psychopathy is a constellation of interpersonal, emotional, and behavioral shortcomings and is often seen as both an extension of and different from Antisocial Personality Disorder (Cale & Lilienfeld, 2002). Each of these disorders has an impulsivity component, and all are externalizing disorders. Further, impulsivity has been linked to violent infractions among incarcerated women (Komarovskaya, Loper, & Warren, 2007). Although there has been research indicating that psychopathy is predictive of violence (Hemphill, Hare, & Wong, 1998), few researchers have examined specifically the associations between Antisocial Personality Disorder, psychopathy, Borderline Personality Disorder, and institutional violence.

In the present study I examined the interactions among and predictive validity of Borderline Personality Disorder and Antisocial Personality Disorder pathology and psychopathy scores in a sample of incarcerated women. First, a brief review of the constructs of Borderline and Antisocial Personality Disorders and psychopathy will be given. Next, a review of literature about these disorders and their role in institutional violence will be discussed. An empirical analysis of the current study was conducted. This analysis focused on four main hypotheses: psychopathy would be predictive of self-reported institutional violence, Antisocial Personality Disorder pathology would predict self-reported institutional violence, Borderline Personality Disorder pathology would predict self-reported institutional violence, and psychopathy and Antisocial and/or Borderline Personality Disorder pathology would be predictive of self-reported institutional violence. Finally, future directions and implications for treatment will be discussed.

Literature Review

Antisocial Personality Disorder

Antisocial Personality Disorder is a character style defined by a continuous behavioral display of societal and norm violations, with evidence of problems before the age of 15 (APA, 2000). Typically those who have been diagnosed with this disorder fail to plan ahead, act aggressively, lack remorse, disregard the safety of others, and repeatedly engage in irresponsible, impulsive, deceitful, and illegal behaviors. Further, these individuals display evidence of antisocial conduct that meets criteria for conduct disorder prior to age 15, which is typically evidenced by theft, aggression, chronic running away, among other behavioral problems. They often appear callous and indifferent to the suffering of others, and may present as arrogant, glib, superficially charming, and sexually promiscuous.

In community samples, the prevalence of Antisocial Personality Disorder is 3% for males and 1% for females, but is thought to be much higher in other settings, such as prisons (APA, 2000). A study by Brown and Nixon (1997) found the prevalence rate of Antisocial Personality Disorder in their sample of female inpatient substance abusers to be 45%, whereas Trestman, Ford, Zhang, and Wiesbrock (2007) found the rate of the disorder in newly incarcerated females to be 33%. In fact, in a literature review by Rotter, Way, Steinbacher, Sawyer, and Smith (2002), 11 studies were reviewed for prevalence rates of Antisocial Personality Disorder within a prison setting. The prevalence of the disorder for incarcerated males ranged from 11% to 78%, and the prevalence rate for incarcerated females ranged from 12% to 65%. Antisocial Personality Disorder has been

linked to low socioeconomic status and urban settings in men (APA, 2000), but is not correlated with low socioeconomic status or family history of the disorder in women (Randolph & Yates, 1993). Although Randolph and Yates did not offer an explanation to the differences in socioeconomic status between men and women, they did theorize that the difference in family history spoke to the importance of environmental influences in women.

Gender differences in the diagnosis of Antisocial Personality Disorder have been explored by researchers. The American Psychiatric Association (2000) noted that the difficulty in meeting Conduct Disorder requirements in youth can lead to underdiagnosis of this disorder in women. Burnette and Newman (2005) examined 261 incarcerated women in a study of the symptoms of Conduct Disorder and subsequent diagnosis of Antisocial Personality Disorder. Most of the participants had not been married (50.6%), were of minority ethnic status (65.9%), had children (79.8%), and had a mean age of 33.6 years (SD = 9). Each participant was administered the Structured Clinical Interview for *DSM-IV-TR* Axis II Personality Disorders (SCID-II), and researchers reviewed the participants' institutional and federal records for information regarding criminal history. The researchers found that 34.1% of the participants met criteria for Antisocial Personality Disorder, whereas another 28.7% met inclusion for a group with adult-onset antisocial behavior. The group with adult-onset antisocial behavior did not meet criteria for Antisocial Personality Disorder because they failed to meet Conduct Disorder criteria, but they did meet all other diagnostic criteria for the diagnosis. Further, having a history of Conduct Disorder accurately predicted an adult diagnosis of Antisocial Personality

Disorder only 66% of the time. The authors concluded that focusing on a link between Conduct Disorder and Antisocial Personality Disorder may not accurately capture the manifestation of Antisocial Personality Disorder in women. Goldstein, Powers, McCusker, Mundt, Lewis, and Bigelow (1996) found similar results, with female participants meeting a higher number of adult symptoms than child symptoms for Antisocial Personality Disorder. A study by Crosby and Sprock (2004) also found a slight bias for a diagnosis of Antisocial Personality Disorder in male versus female clients, with clinicians generally feeling more confident of this diagnosis with male clients.

Psychopathy

Psychopathy is a construct that was first given strong attention by Cleckley (1941) in his book *The Mask of Sanity*. Cleckley described psychopaths as superficially charming, highly intelligent, unreliable, untruthful, and insincere. Further, he identified them as being generally in good mental health (i.e., without delusions, nervousness, or irrational thinking), and lacking remorse, love, affect, insight, interpersonal relationships, or meaningful life plans. Cleckley described psychopaths as engaging in behaviors that would seem out of place in general society, including criminal and aberrant sexual behaviors. Thus, Cleckley identified a cluster of personality traits and behaviors as defining the construct of psychopathy.

Robert Hare (1980) took Cleckley's conceptualization of psychopathy and modified it. This was through his development of the Psychopathy Checklist (PCL), a measurement for the construct of psychopathy through behavior and personality items (Hare, 1980). Hare (1988) found that his 22-item measure could be defined by two

factors: Selfish, Callous, and Remorseless Use of Others (Factor 1), and Chronically Unstable and Antisocial Lifestyle (Factor 2). Over time, the PCL was reworked until the most current version, the Psychopathy Checklist-Revised 2nd Edition (PCL-R), was created (Hare, 2003). This version of the measure also identified two factors, the first of which describes interpersonal and affective difficulties, and the second of which defines chronic irresponsibility, impulsivity, and criminality. The current conceptualization of psychopathy is based upon Hare's work and is typically measured through the PCL-R. Thus, psychopathy as defined by Hare (1980) is a constellation of emotional and interpersonal traits, including narcissism, untruthfulness, lack of empathy, manipulation, and glibness, and irresponsible and antisocial lifestyle traits, including sexual promiscuity, chronic reliance upon others for assistance, and underregulation of behavior control.

Although psychopathy has been most often studied in males (Forouzan & Cooke, 2005), it has received recent empirical attention in females. Base rates are inconclusive across studies, but psychopathy generally tends to be less prevalent among incarcerated females when compared with incarcerated males (Vitale & Newman, 2001). Further, the interpersonal and affective components of psychopathy include factors that provide more information about the presence of psychopathy than do the behavioral/criminal components, which contain more extraneous and irrelevant factors for female populations (Bolt, Hare, Vitale, & Newman, 2004). Thus, the interpersonal and affective components demonstrate more trait-expression stability among female populations when compared to the behavioral/criminal components. Evidence has suggested that females tend to display

more sexual promiscuity and less juvenile delinquency and lack of empathy than do males, and thus females may display a different symptom constellation than males (Grann, 2000).

In order to learn more about the female manifestation of psychopathy, Jackson, Rogers, Neumann, and Lambert (2002) examined the PCL-R dimensions of psychopathy in 119 female inmates. The participants in the study were primarily Caucasian (54.6%) and had a mean age of 31.24 years (*SD* = 8.04). The PCL-R was completed for all participants and a revised cutoff score of 25 for high psychopathy was used. This revised cutoff was used because previous literature has shown it to better capture high levels of psychopathy in women, whereas a cut-off score of 30 better captured high levels of psychopathy in men. The mean PCL-R score in the study was 18.17 (*SD* = 6.98), with 21.9% of participants falling into the high psychopathy range after using the revised cutoff score. The authors found that females were less likely to be labeled as psychopathic when compared to males and appeared to display different traits when they were labeled as such. Specifically, they found that traits such as callousness, lack of remorse, and shallow affect to be important in distinguishing psychopathic from non-psychopathic women.

In order to fully understand female criminal behavior, it is important to examine the differences between the constructs of Antisocial Personality Disorder and psychopathy. Sturek, Loper, and Warren (2008) examined the usefulness of the Structured Clinical Interview for DSM-III-R Personality Disorders Personality Questionnaire (SCID-II-PQ) as a screening tool for psychopathy. The sample included

136 female inmates who were not psychotic but who were likely to exhibit Cluster B personality disorder symptoms (i.e., Histrionic, Borderline, Antisocial, and Narcissistic Personality Disorders). File reviews, interviews, and self-report data were collected from each participant, whereas interrater reliability revealed coefficients of .88 (PCL-R Factor 1), .99 (PCL-R Factor 2), and .95 (PCL-R Total Score). The mean age of women in the study was 31.36 years, whereas ages ranged between 18 and 61 years of age. The majority of participants were African American (56%) and Caucasian (34%), were not married at the time of the study (77%), and were parents (79%). The most common crimes for incarceration included homicide (32.4%) and drug crimes (15.4%), and the majority (65%) of inmates had not been previously incarcerated. The authors found no significant relationship between any of the personality disorders and PCL-R Factor 1 (affective and interpersonal components), $F(10, 134) = 1.09$, $p = .37$, but they did find significant correlations between Antisocial Personality Disorder and PCL-R Factor 2 (criminality), $F(10, 134) = 3.79$, $p < .00$ and the Total PCL-R Score, $F(10, 134) = 2.26$, $p = .02$. There were no other significant relationships between personality disorders and the PCL-R scores. Further, the authors found that the Conduct Disorder Scale of the SCID-II-PQ was the only subscale of the Antisocial Personality Disorder scale that contained items that positively predicted psychopathy. Thus, these findings were similar to others (APA, 2000) in that Antisocial Personality Disorder seemed to be most closely related to the behavioral aspects of psychopathy as assessed with the PCL-R.

Warren and South (2006) examined the relationship between Antisocial Personality Disorder and psychopathy, as assessed with the PCL-R. Additionally, they

examined the relationships among Antisocial Personality Disorder, Psychopathy, and a number of variables, including distress, anger, impulsivity, and criminal behaviors in female inmates. Participants were portioned into one of four categories: Antisocial Personality Disorder only, PCL-R score of 25 or higher only, Antisocial Personality Disorder and PCL-R score of 25 or higher, and PCL-R score under 25 and no diagnosis of Antisocial Personality Disorder (Non-Diagnosable). All of the participants (N = 137) were incarcerated at a maximum security female prison and the sample consisted primarily of ethnic minority identified women (65.7%) under the age of 32 (60.5%). Most of the participants were serving a sentence five or more years long (77.2%), had not been previously incarcerated (68%), and had a conviction for a violent crime (64%). Each participant was assessed via various self-report or researcher-scored instruments, including the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II), PCL-R, Violence and Aggression During Incarceration Questionnaire, and the Prison Adjustment Questionnaire. The researchers also examined each participant's criminal history and institutional infraction history.

Warren and South (2006) found the majority of participants to fall into the Non-Diagnosable (36%) and high PCL-R/Antisocial Personality Disorder (32%) groups. The Antisocial Personality Disorder only and PCL-R only groups made up 17% and 15% of the sample, respectively. Individuals who had high PCL-R scores tended to have fewer additional personality disorders than did all other participants. Further, the PCL-R-only group and the PCL-R/Antisocial Personality Disorder group had higher percentages of participants who had a history of property crimes (42.9 and 43.2%, respectively), whereas

the PCL-R-only group had the smallest percentage of participants who had a history of homicide (9.5%). The researchers also found that there were no differences between any of the groups in regard to institutional misconduct. However, the Antisocial Personality Disorder only group was more likely than any other group to threaten (61.9%) and assault (71.4%) others during incarceration. The researchers concluded that this study supported the theory that Antisocial Personality Disorder and psychopathy were different constructs with different characteristics in women. Specifically, the results suggested that individuals with primarily behavioral expressions of criminality were likely to engage in higher rates of violence than were those who displayed primarily emotional/interpersonal characteristics. Thus, the constructs of Antisocial Personality Disorder and Psychopathy among women have distinctly different behavioral manifestations.

As described, there are notable differences between male and female expression of psychopathy (Jackson et al., 2002; Warren & South, 2006). Additionally, whereas psychopathy and Antisocial Personality Disorder have similar underpinnings, they are two very separate constructs (Sturek, Loper, & Warren, 2008; Warren & South, 2006). Similarly, Borderline Personality Disorder shares several characteristics consistent with the disorders discussed thus far, but is also a distinctly different construct.

Borderline Personality Disorder

Borderline Personality Disorder describes a constellation of character traits related to interpersonal difficulties, self-image instability, and affective complexity (APA, 2000). Typically those who demonstrate these characteristics experience an unstable sense of self, emotional dysregulation, and impulsivity. They often have intense

emotional responses and interpersonal interactions, which can lead to rapid displays of anger, self-injury, and suicidal behavior. Further, they often fear abandonment and will engage in frantic behaviors to avoid it. Individuals with this disorder may self-sabotage and display significant impulsivity. In a study of female prison inmates, those with Borderline Personality Disorder were more likely to engage in impulsive behaviors in a laboratory task when compared to female inmates without the disorder, even when the reward for not acting impulsively was substantial (i.e., a monetary reward; Hochhausen, Lorenz, & Newman, 2002).

The prevalence of Borderline Personality Disorder ranges from 30% to 60% in clinical populations, with approximately 75% of all individuals who are diagnosed being female (APA, 2000). Researchers in one study (Burnette & Newman, 2005) found a base rate of 23.8% of inmates who met criteria for Borderline Personality Disorder, while other researchers (Black, Gunter, Allen, Blum, Arndt, Wenman, & Sieleni, 2007) reported a base rate of 54.5% of women meeting criteria for the disorder in prison. Although both sets of researchers measured Borderline Personality Disorder using the same structured clinical interview (SCID-II), the differences in base rates between the two studies could have been due to methodological and sample differences. Specifically, researchers in one study (Black et al., 2007) did not include violent offenders or maximum security inmates, whereas researchers in the other study (Burnette & Newman, 2005) only sampled maximum-security inmates.

Despite discrepancies in prevalence rates, research has been conducted on within-group similarities for those with Borderline Personality Disorder. From this research a

familial link between those diagnosed with Borderline Personality Disorder and those diagnosed with Antisocial Personality Disorder has been identified (APA, 2000). Further, Borderline Personality Disorder traits have been linked to physical aggression in women (Hughes, Stuart, Gordon, & Moore, 2007). As with Antisocial Personality Disorder and men, there may in fact be a gender bias related to diagnosis. In other words, more women may be diagnosed with this disorder, even if the women actually appear to be more antisocial than borderline in nature (Crosby & Sprock, 2004).

Overlap Between Antisocial and Borderline Personality Disorders

Antisocial and Borderline Personality Disorders share several characteristics and diagnostic criteria (APA, 2000). For example, impulsivity is a central characteristic displayed by people with either disorder. In a study of college students, impulsivity and self-harm were significantly correlated with Antisocial and Borderline Personality Disorders, with impulsivity being highly related to Antisocial Personality Disorder and self-harm being highly related to Borderline Personality Disorder (Casillas & Clark, 2002). According to the *DSM-IV TR* (APA, 2000), manipulation is also frequently seen in people with either disorder, although the reason for manipulation may vary. For example, manipulation in people with Antisocial personality Disorder might be aimed at gaining something tangible, such as money or property, whereas manipulation in people with Borderline Personality Disorder might be aimed at fulfilling an internal or relational need, such as attention or concern from others. Additionally, anger is a common theme among those with either disorder. A criterion for Borderline Personality Disorder

includes intense anger that is not easily controlled, whereas Antisocial Personality Disorder is manifested as aggressiveness, violence, and irritability.

Individuals with Borderline Personality Disorder and Antisocial Personality Disorder frequently experience abuse, neglect, or other significant events in childhood (APA, 2000). Research has shown that those with Antisocial Personality Disorder and Borderline Personality Disorder differ in physiological and self-report reactions, but they tend to have similar implicit cognitions in regards to stress that is related to abuse (Lobbestael & Arntz, 2010). Specifically, these authors noted that these cognitions are related to abuse of self and suggested cognitive schemas that are strongly associated with abuse and the notion that others are harmful. Therefore, the results of this study showed that individuals with Borderline Personality Disorder and Antisocial Personality Disorder reported different reactions to their abuse, and had different physiological reactions to this stress, but they actually had similar unconscious thoughts and reactions that resulted in their similarly viewing the world as a harmful and threatening place. However, how individuals dealt with their worldview differed between diagnoses.

Just as some reactions to stress differ in individuals with these diagnoses, so do their defense mechanisms. Presniak, Olson, and MacGregor (2010) conducted two studies in which they examined the self-reported and observed defense mechanisms in college students who were identified as having borderline or antisocial character pathology as measured by the Personality Assessment Inventory (PAI). The researchers found that students who were identified in the borderline group tended to use defense mechanisms such as turning against self and passive aggression, whereas those identified

in the antisocial group used devaluation of others and grandiosity. Thus, when defenses were needed, those identified as the Borderline Personality Disorder group directed their negative feelings inwards, whereas those in the Antisocial Personality Disorder group directed their feelings outwards. This may account for the differences in manipulation evidenced among both disorders. As previously noted, individuals with Borderline Personality Disorder attempt to manipulate for internal gratification while individuals with Antisocial Personality Disorder manipulate for a more tangible gain. The motivation for manipulation mirrors the defense mechanisms used by individuals with these diagnoses.

In addition to having many commonalities, it is possible for Antisocial and Borderline Personality Disorders to be comorbid. Howard, Huband, Duggan, and Mannion (2008) examined a dual-gender community sample ($N = 224$) for Antisocial/Borderline Personality Disorder overlap. They found that 8.9% of the sample met criteria for both diagnoses. This comorbid sample involved people who were more likely to display outward expressions of anger, had more difficulty controlling this anger, and displayed higher rates of impulsivity, violence, drug problems, and interactions with the legal system when compared with those who met criteria for a single disorder. It should be noted that results of this study include data from both male and female participants because they were not separated by gender during analyses.

As previously noted, it has been surmised that Antisocial Personality Disorder is underdiagnosed, whereas Borderline Personality Disorder is overdiagnosed in women. Crosby and Sprock (2004) found that clinicians were significantly more likely to

diagnose Borderline Personality Disorder with female clients whose presentation is truly more antisocial due to stereotypes surrounding gender and symptom presentation. For example, a clinician might be more inclined to attribute aggressive behavior to Borderline Personality Disorder than Antisocial Personality Disorder because characteristics associated with Borderline Personality Disorder are considered feminine (e.g., focus on interpersonal relationships, mood lability and broad affect) whereas characteristics associated with Antisocial Personality Disorder are traditionally masculine (e.g., expressions of anger and negative emotionality, acting-out behaviors, fighting). Thus, clinician bias may account for some of the differences in diagnosis between Antisocial Personality Disorder and Borderline Personality Disorder in men and women, and may result in underdiagnosis of Antisocial Personality Disorder in women. It is necessary to be aware of symptom overlap and diagnostic bias in order to fully understand the interaction between Antisocial Personality Disorder, Borderline Personality Disorder, and violence among female offenders.

Personality Disorders and Institutional Violence

To date, the prevalence and precursors of violence within prisons is not fully understood. A report by the Commission on Safety and Abuse in America's Prisons (Gibbons & Katzenbach, 2006) indicated that not all states collect or report information on assaults within the prisons, and that prevalence rates vary greatly among the states that do collect this information. Further, violence within prisons is likely much higher than administrative records show due to inmate hesitancy in reporting violence, difficulty establishing a consistent definition of violence, and inconsistencies at both the state and

national level regarding documentation of violence. However, Gibbons and Katzenbach note that violence is likely quite prevalent in general, despite lack of documentation of its occurrences. Although accurate violence rates within prisons are not available, estimates suggest that 20% of all female inmates are victims of violence over any 6-month period (Wolff et al., 2007). The lack of information collected about prison violence is alarming, given harm and potential death associated with violence.

In order to fully understand institutional violence, it is important to understand the factors that contribute to this phenomenon. Some research has focused on situational variables outside of inmate psychological or interpersonal variables as predictors of institutional violence. Gadon, Johnstone, and Cooke (2006) examined 48 articles in order to empirically determine situational risk factors for institutional violence. Although the minority of studies were conducted in a prison setting (44%) versus a closed psychiatric setting (56%), the authors were able to identify several situational factors for prison violence. The authors identified high security level, areas of high traffic and low staff presence, groups of younger prisoners, and less staff experience as predictors of institutional violence. Further, they identified effective and supportive management styles as mitigating prison violence. Thus, this study was not about inmate characteristics but rather situational factors that may interact with inmate characteristics (e.g., personality disorders) to produce institutional violence.

Whereas information regarding contextual factors is useful in some respects, information regarding inmate personality characteristics and the predilection of institutional violence is imperative for fully understanding violence in prisons. Warren

and colleagues examined the relationship between criminality, the PCL-R, and the Historical, Clinical, and Risk Management Scheme (HCR-20) in a sample of incarcerated women (Warren et al., 2005). In this retrospective study, the researchers examined whether the measures were associated with prior violence within the institution. The sample of 132 female inmates were recruited from a maximum-security prison and were deemed not psychotic. Further, this group of inmates were assumed to likely meet the criteria for Antisocial, Borderline, Histrionic, and/or Narcissistic personality disorders as measured by the SCID-II Screen. The PCL-R and the HCR-20, a violence risk assessment instrument, were completed for each participant in the study. The presence of violence, including institutional violence, was gathered through a prison file review for each participant. The majority of participants had not engaged in institutional violence (76%), with 24% of participants having documented engagement in institutional violence in their prison files.

Warren et al. (2005) found that intraclass correlation coefficients were generally good, ranging from .60 to .94 for HCR-20 total and factor scores, and .88 to .99 for PCL-R total and factor scores. The HCR-20 total score was positively correlated with the PCL-R Factor 1 and Factor 2 scores, whereas the PCL-R total score was positively correlated with all three HCR-20 subscales. Of note, the participants who had prior convictions for nonviolent property crimes had higher PCL-R scores (M = 25.1) than participants who did not have prior convictions for nonviolent property crimes (M = 21.8). The researchers additionally found that neither risk measure was associated with prior institutional violence (mean PCL-R score for no institutional violence = 21.27; mean PCL-R score for

institutional violence = 23.27.) They noted that this may in part be due to the overall lower levels of violence involved in acting-out behaviors demonstrated by psychopathic female inmates and did not equate to overall low levels of institutional misconduct. Finally, the authors noted that the two measures were most highly correlated on the subscales that assessed prior criminal behaviors, such as Factor 2 on the PCL-R.

Warren et. al (2002) examined the relationship between personality disorders and criminality and violence. It should be noted that participants came from the same sample as Warren et al.'s (2005) study. Participants (N = 261) in the sample included women who met criteria for a Cluster B personality disorder (n = 132), a non-Cluster B personality disorder (n = 42), or no personality disorder (n = 86). Most participants were of a minority ethnic background (65.9%), older than 32 years of age (51.3%), and were serving a sentence of five or more years (64.5%). The most common personality disorder diagnoses were Antisocial (43%), Paranoid (27%), and Borderline (24%), with Borderline and Antisocial diagnoses having the highest comorbidity (43%; n = 75). Further, Cluster B diagnoses significantly predicted self-reported institutional violence, especially among those diagnosed with Antisocial and Borderline personality disorders. Cluster A, Cluster C, and other Cluster B personality diagnoses (i.e., Narcissistic, Histrionic) were not predictive of institutional violence. Thus, this study highlights both the importance of collecting self-report violence data and the role Antisocial and Borderline personality disorders play in such violence.

Conflicting evidence has emerged regarding psychopathy as a predictor of institutional violence within primarily male samples. McDermott, Edens, Quanbeck,

Busse, and Scott (2007) examined the aggressive behavior of 108 patients committed to a state hospital. The majority of these patients (80%) were committed because they were determined to be incompetent to stand trial, not guilty by reason of insanity, or for being a mentally disordered offender. Further, the majority were male (84%) and Caucasian (72%), and had been diagnosed with schizophrenia (53%). The authors used the PCL-R, Violence Risk Appraisal Guide (VRAG; Quinsey, Harris, Rice, & Cormier, 2006), and HCR-20 as risk prediction measures, and they examined hospital reports at the end of the study to determine the rate of institutional violence for each participant. Results showed a weak (r = .09, AUC = .58, SE = .07) link between institutional violence and total PCL-R score. However, the affective component of psychopathy (PCL-R Facet 1 score) showed a small significant relationship with aggression directed toward other patients, and the behavioral component of psychopathy (PCL-R Factor 2 score) was significantly predictive of aggression directed towards staff members. Both the VRAG and HCR-20 added incremental validity to total PCL-R scores and the prediction of institutional aggression.

Guy, Edens, Anthony, and Douglas (2005) conducted a meta-analysis in which they examined 273 effect sizes to determine the link between psychopathy as measured with the PCL-R and institutional misconduct. The participants in the studies examined were primarily male (78%) and Caucasian (68%), and the mean age was 33 (SD = 5.83). Most of the studies were conducted in prisons (47%) or forensic psychiatric/sex offender treatment programs (39.5%). The studies in the meta-analysis were all completed between 1984 and 2004, and they included both published and unpublished manuscripts.

The exact number of studies involving female participants was not discussed by Guy et al., but I could only definitively identify four studies involving female participants from the reference list. The authors found that whereas psychopathy was related to general institutional misconduct, the behavioral components of psychopathy were more strongly associated with misconduct than were the interpersonal and affective components. Further, physical violence was less associated with PCL-R total score than was any other type of institutional infraction. Despite the small female sample size, authors noted that there did not appear to be gender differences among the findings, although an effect size for gender was not reported. Thus, the authors concluded that PCL-R score was not predictive of institutional violence.

In sum, although researchers have examined the role between personality characteristics and violence (Hemphill, Hare, & Wong, 1998; Hughes, Stuart, Gordon, & Moore, 2007), there has been less attention by researchers given to this relationship among female inmates. Antisocial Personality Disorder and Borderline Personality Disorder are commonly diagnosed in female inmates (Warren et al., 2002). Further, there is evidence to suggest that Antisocial Personality Disorder and psychopathy are different clinical constructs, especially when applied to female inmates (Warren & South, 2006). Whereas some research has focused on the presence of Antisocial Personality Disorder and psychopathy as predictors of institutional violence in women (Warren & South, 2006), few researchers have taken an in-depth look at the interactions among Antisocial Personality Disorder, Borderline Personality Disorder, psychopathy, and institutional violence in women. Further, whereas the presence of a personality disorder has not

consistently predicted institutional violence (Guy et al., 2005; McDermott et al., 2007; Warren et al., 2005), these studies have primarily been conducted with male samples. Additionally, only one study (Warren et al., 2002) examined self-report of institutional violence, suggesting frequent neglect of an important measure of violence. Thus, there are no definitive findings to date regarding the prediction of institutional violence for female inmates with high psychopathy and/or Borderline and Antisocial Personality Disorders.

Purpose of the Present Study

In the current study, I examined a population of adult females who were incarcerated in a state prison for the first time. Violence data were gathered by self-report measures of perpetration of institutional violence prospectively over the course of the inmate's first year of incarceration. Violence perpetration, as opposed to victimization, was examined due to my interest in this subject. In this study, the prevalence rates of Antisocial Personality Disorder, Borderline Personality Disorder, and psychopathy in a group of incarcerated females were examined, as were data on the comorbidity of each of these conditions. Next, the relationship of these personality disorders to perpetration of institutional violence was examined. It was expected that the presence of each diagnosis would be related to and predictive of institutional violence. Given the behavioral manifestations of psychopathy, the first hypothesis of this study was that psychopathy, as measured by the PCL-R, would be predictive of self-reported institutional violence. Similarly, the second hypothesis was that Antisocial Personality Disorder pathology would predict self-reported institutional violence. Antisocial pathology was assessed

through *DSM-IV-TR* symptoms and the PAI Antisocial Features scale. Primarily due to the impulsivity and emotional dysregulation associated with Borderline Personality Disorder, the third hypothesis was that the pathology of this disorder would predict self-reported institutional violence. Borderline pathology was assessed through *DSM-IV-TR* symptoms and the PAI Borderline Features scale. Finally, the fourth hypothesis was that psychopathy and Antisocial and/or Borderline Personality Disorder pathology would be predictive of self-reported institutional violence. Again, antisocial and borderline pathology were measured both through *DSM-IV-TR* symptoms and PAI scales.

Method

Participants

The current study was part of a larger, 2-year study involving women's adjustment to prison. The larger study was conducted by three research assistants, including this writer, and a faculty Principal Investigator. Participants were recruited from the Oregon Department of Corrections and included adult females who were involved in the intake process at Coffee Creek Correctional Facility, the only prison housing females in the state of Oregon. This correctional facility holds minimum- and medium-security inmates. Participants included adult females who had been convicted of at least one crime and who were entering prison for the first time. At the time of intake, custody level of participants was unknown. Whereas 150 participants were originally recruited for the larger study, a total of 79 participants completed all measures necessary for the analyses in the current study. Information on reasons for attrition was not gathered, but anecdotally it appeared that many participants dropped out do to unanticipated early parole.

All participants were at least 18 years old at the time of participation in this study. Ages of participants ranged from 18 to 63, with an average age of 34 years (SD = 12). The majority of participants had completed 12 or more years of education (52%), and 33% of those who did not complete high school had obtained a GED by the time they participated in the study. Participants that were single and had never been married (45%) by the time of the study made up the most common marital status category. However,

most participants had two or more children (62%), with an average of two children per participant (median = 2).

Within this sample, most participants had been incarcerated for a nonviolent crime (66%) and were serving an average sentence of 39 months (*SD* = 41). According to the Oregon Department of Corrections (2010) male and female inmate census data, Caucasian and Asian-American participants were overrepresented in the current sample (see Table 1). Further, African-American and Hispanic inmates in the current sample were underrepresented, whereas Native American prevalence rates in the current study were similar to that of the general male and female inmate population in Oregon.

Participants were excluded if they were under 18 years old, non-English speaking, unable to read to fill out the questionnaires, or if they did not provide a valid PAI profile. Further, a minimum 1-year sentence was required for participation. No other exclusionary criteria were employed.

Measures

Psychopathy Checklist – Revised 2nd Edition. The Psychopathy Checklist – Revised (PCL-R) is a 20-item measure that assesses the behavioral, emotional, and social aspects of psychopathy. Items include glibness/superficial charm, grandiose sense of self-worth, conning/manipulative, pathological lying, lack of remorse or guilt, shallow affect, callous/lack of empathy, failure to accept responsibility (Factor 1), need for stimulation/proneness to boredom, parasitic lifestyle, poor behavioral control, lack of realistic, long-term goals, impulsivity, irresponsibility, juvenile delinquency, early behavioral problems, revocation of conditional release, criminal versatility (Factor 2), and many short-term marital relationships and promiscuous sexual behavior (Hare, 2003).

Each item is scored on a scale from 0 (not present) to 2 (definitely present) to reflect how closely the item matches the examinee. Scores are given after a required file review and

Table 1

Participant Demographics

Ethnicity	% (*DOC census**)	n
Caucasian	81.7 (*73*)	67
African American	6.1 (*10*)	5
Hispanic	4.9 (*13*)	4
Asian American	3.7 (*1*)	3
Native American	2.4 (*2*)	2
Bi/multi-racial	1.2 (*unknown*)	1

**From Oregon Department of Corrections (2010) male and female inmate data*

optional, but recommended, semi-structured clinical interview. Studies have shown the PCL-R to be fairly valid (r = -12 to r = 26) and reliable (internal consistency = .82; interrater reliability = .95 - .97) within a female population (Vitale, Smith, Brinkley, & Newman, 2002).

In the present study, each PCL-R score was determined after a semi-structured clinical interview, guided by the PCL-R Interview Guide, and after a thorough file review was completed. File reviews included legal, medical, and psychological charts, and police and parole officer records.

Personality Disorder Form. The Personality Disorder Form is a checklist created by the principal investigator of this study that uses criteria from the *DSM-IV-TR* (APA, 2000) to identify diagnoses of Antisocial or Borderline Personality Disorders. At the end of the second baseline session, a research assistant reviewed all file and interview data to determine whether the participant meet criteria for each symptom of each disorder. All participants were given a dichotomous score (yes/no) for each symptom and for diagnosis of Antisocial or Borderline Personality Disorder.

Personality Assessment Inventory. The PAI is a 344 item, self-report measure of psychopathology (Morey, 1991). Each item is rated on a four-point scale that measures the degree of agreement with each item. This measure includes clinical scales for both Borderline and Antisocial Features, thus measuring personality traits consistent with Antisocial and Borderline Personality Disorder pathology. In this study the PAI was administered by prison clinicians and was determined to be valid prior to each participant beginning the study. The PAI has been normed on a correctional sample and has demonstrated good reliability (coefficient alpha =.81 - .86; median test-retest correlation = .83) and validity (Borderline Features r = .77; Antisocial Features r = .82) (Edens & Ruiz, 2005; Morey, 1996).

Prison Violence Inventory. The Prison Violence Inventory (PVI) is a 14 paired-item measure that assesses the amount of violence an inmate has experienced and perpetrated within the institution (Warren et al., 2002). Each item requires a yes or no response from the participant in response to behavioral expressions of violence, such as hitting, kicking, punching, etc. Nine of the 12 items are specific to threats and physical and/or sexual violence, whereas three items are specific to rumors, lies, and stealing

personal items. This measure gathers information specific to the types of violence, as opposed to total instances of violence, experienced. For the purposes of this study, only items specific to the perpetration of institutional violence were examined.

Participants and Settings

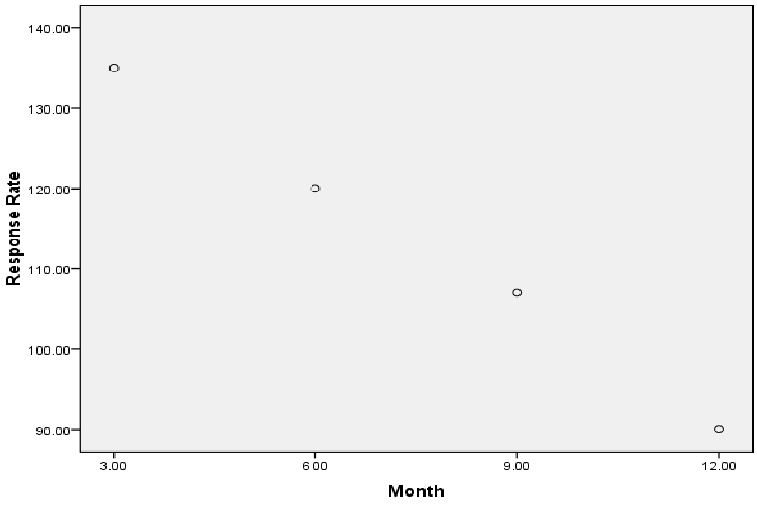
As previously noted, this study was conducted over a 2-year period and is part of a larger study examining women's adjustment to prison. One of the three researchers met with each participant on at least two occasions to administer a variety of measures, including the Psychopathic Personality Inventory - Revised (PPI-R), Inventory of Interpersonal Problems (IIP-64), Trauma Symptom Inventory – Revised (TSI-R), Initial Trauma Review – Revised (ITR-R), Prison Adaptation Questionnaire (PAQ), Women's Adjustment to Prison Survey (WAPS), Hypersensitive Narcissism Scale (HSNS), Narcissistic Personality Inventory (NPI), and the PVI. Additionally, information was gathered in order to score the PCL-R, VRAG, and Personality Disorder Form. Because the PAI is a standard measure given upon intake into the prison, it was administered to each participant prior to beginning the research study. During the first meeting, the PPI-R, IIP-64, and TSI-R were given. After the first meeting a collateral information review was conducted to gather legal and mental health information to be used in scoring the PCL-R, VRAG, and personality disorder diagnoses. The review of collateral information included police reports, medical and parole records, presentencing investigative reports, previous psychological evaluations, treatment information, and other relevant collateral information.

During the second meeting the remaining measures were administered, including the PVI, and a semi-structured clinical interview was completed with the participant. The

semi-structured clinical interview included standard PCL-R interview questions and several additional questions aimed at eliciting information necessary to score the Personality Disorder Form and the VRAG. After this meeting the researcher scored each item on the PCL-R, VRAG, and the Personality Disorder Form.

After the initial data were gathered, each participant received a packet from the researchers every 3 months for the duration of 1 year. Each packet included the PVI and was sent through confidential prison mail. Instructions included with the PVI instructed the participant to fill it out and return it to the research team via confidential prison mail. There was a graded attrition rate over the one year period, as demonstrated in Figure 1. Participants who completed the study were no different from participants who did not complete the study in age, highest grade completed in school, number of children, total PCL-R score, total number of Antisocial Personality Disorder symptoms, total number of Borderline Personality Disorder symptoms, total PAI Antisocial Features scale, or total PAI Borderline Features scale. However, participants who completed the study had significantly longer sentences, $t(143) = -2.57$, $p = .01$, than those who did not complete the study.

Figure 1. Response Rate by Month



As noted, three investigators, including this writer, independently worked with the participants. Each investigator had previously attended a 2-day training on the PCL-R and had participated in 10 case studies to determine interrater reliability. All three investigators had training in clinical psychology, including personality disorder diagnosis, and were advanced graduate students. All data were entered into a computer program by another advanced graduate student who was otherwise not associated with data collection.

Results

The purpose of this study was to explore the relationship between personality disorder characteristics and institutional violence among incarcerated women. More specifically, I attempted to investigate the abilities of Antisocial and Borderline Personality Disorder pathology, PAI Borderline and Antisocial Features scales *t*-scores, and total PCL-R scores to predict institutional violence among first-time female inmates. First, I examined descriptive statistics for prevalence rates and comorbidities of Borderline and Antisocial Personality Disorders and psychopathy. The results showed generally low rates of psychopathology, with the average number of Borderline and Antisocial Personality Disorder symptoms falling far below the *DSM-IV-TR* (APA, 2000) diagnostic threshold for either disorder. Despite a low mean number of symptoms, the prevalence rate for Antisocial Personality Disorder was within a normal range (31% of the sample), with the prevalence of Borderline Personality Disorder falling below what is typically seen in similar populations (13%). Table 2 lists the prevalence rates and comorbidities for those who meet criteria for the aforementioned personality disorders, whereas Table 3 provides symptom information.

Next, descriptive statistics for violence at the 3-, 6-, 9-, and 12- month marks were examined. Total violence for each 3 month increment was calculated by responses on the PVI that included pushing, slapping, kicking, hitting, biting, choking, attacking with a weapon, attempting to force sex, throwing something, and any other types of physical violence as identified by the participants. Relational and other types of non-physical violence were not part of the operational definition of violence in this study. Total scores reflected total types of violence, as opposed to total instances of violence, over that time

period in which the participant reported engaging. PVI scores were generally low: total average violence type was less than 1.0 at each 3-month interval. Violence was not normally distributed and was positively skewed. Table 3 highlights the average number of violence types perpetrated by participants at each 3-month period and at the end of the 12-month period. The total percentage of participants who reported perpetrating any institutional violence was low to moderate (25%) with 75% of inmates reporting no violent acts during the follow-up period.

Table 2

Prevalence Rates of Personality Disorder

Diagnosis	*n*	%
Borderline PD	20	13
Antisocial PD	48	31
Borderline and Antisocial PD	7	5
High Psychopathy*	17	11
High Psychopathy* and Antisocial PD	12	8
High Psychopathy* and Borderline PD	4	3

*The cut score used in this sample to designate high psychopathy was 25

Table 3

Descriptive Information for Symptoms

Diagnosis	*Min*	*Max*	*Mean Number of Symptoms (SD)*
Borderline PD	0	8	1.84(2.12)
Antisocial PD	0	7	3.27(2.37)

Table 4

Violence at 3, 6, 9, and 12 months as assessed by the PVI

Month *with No Violence*	*M*	*SD*	*Min*	*Max*	*%*
0-3	0.16	0 .71	0	6	92.60
3-6	0.20	0.63	0	3	88.30
6-9	0.33	1.02	0	5	86.90
9-12	0.21	0.68	0	4	86.70
0-12	0.84	2.12	0	12	74.70

Correlations between the personality variables (number of Borderline and Antisocial Personality Disorder symptoms, total PCL-R score, PAI Antisocial and Borderline Features *t*-scores) were examined. These variables were highly correlated with

one another, excluding PAI Borderline features *t*-scores and Antisocial Personality Disorder *DSM-IV-TR* symptoms, and Borderline and Antisocial Personality Disorder *DSM-IV-TR* symptoms. This suggests that most of the constructs examined had significant, positive relationships with one another, whereas measures of Borderline pathology and Antisocial Personality Disorder were not significantly related. Correlations between total violence and personality characteristics were also examined. All correlations are listed in Table 5.

Table 5

Bivariate correlations among variables

	ASPD	BPD	PCL-R	PAI-ANT	PAI-BOR	PVI-VIO	AGE
ASPD	-	.21	.66**	.42**	.16	.19	-.16
BPD		-	.40**	.22**	.46**	.14	-.22**
PCL-R			-	.54**	.40**	.29*	-.34**
PAI-ANT				-	.63**	.16	-.20*
PAI-BOR					-	.21*	-.19*
PVI-VIO						-	-.28*
AGE							-

* indicates significance at the .05 level
** indicates significance at the .01 level

Before testing the main hypotheses, I examined the normality of the distributions. As previously mentioned, total self-reported violence was heavily skewed and did not represent a normal distribution. Scatterplots of the analyses showed that the residuals

were not normally distributed, and therefore linearity, normality, and homoscedasticity could not be assumed. Regression was initially run despite these assumptions. Because there is a known relationship between age and violence (Yang, Wong, & Coid, 2010), the effect of age upon violence was examined. This was done to determine whether age would account for any significant results between variables. In this study, age did significantly predict violence $\beta = -.28$, $t(77) = -2.52$, $p = .01$. There were no significant correlations between total violence over the year and the personality variables (number of Borderline and Antisocial Personality Disorder symptoms, total PCL-R score, PAI Antisocial and Borderline Features t-scores) once age was accounted for. This suggests little to no relationship among the variables. Further, none of the personality variables predicted violence once age was accounted for. Again, see Table 5 for Pearson product moment correlation coefficients prior to accounting for the effects of age.

Due to the insignificant correlations between violence and the personality variables once age was accounted for, Receiver Operating Characteristic (ROC) analyses were performed. The ROC curve produces an Area Under the Curve (AUC) probability value. An AUC of 0.50 means that the measure is as useful as chance in accurately discriminating between two groups, whereas an AUC of 1.0 demonstrates that the measure has no false positives and no false negatives and thus is very good in discriminating between groups (van den Hout, 2003). AUC values between 0.56 and 0.63 suggest small discriminant ability, whereas AUC values between 0.64 and 0.70 demonstrate moderate discriminant ability (Kraemer et al., 2003). Further, AUC values from 0.71 to 0.75 suggest greater discriminant ability and AUC values equal to or larger than 0.76 suggest discriminant ability that is large and ideal (Kraemer et al., 2003). The

ROC curve is insensitive to base rate and therefore was presumed to elicit the most useful results from the data. ROC analyses require a dichotomous outcome variable; thus, violence was coded as present or absent. A participant who reported any act of violence perpetration during the 1-year follow-up period was considered "violent" whereas the majority of participants were considered "nonviolent" because they did not report any acts of violence. Therefore, in the remainder of this paper, I will focus on how useful each of these measures was in identifying the presence of violence instead of the original hypotheses, which focused on prediction based upon increased symptom totals.

The results of the ROC analysis indicated that the PCL-R, Antisocial Personality Disorder *DSM-IV-TR* symptoms, and PAI Antisocial Features scale were poor measures of whether someone engaged in violence over the 1-year period (AUC = .58, .54, and .61, respectively). However, the Borderline Personality Disorder DSM-IV-TR symptoms and the PAI Borderline Features scale were moderately measures in discriminating between whether someone did or did not engage in violence over the 1-year period (AUC = .66 and .68, respectively).

Figure 2. PAI Antisocial Features ROC

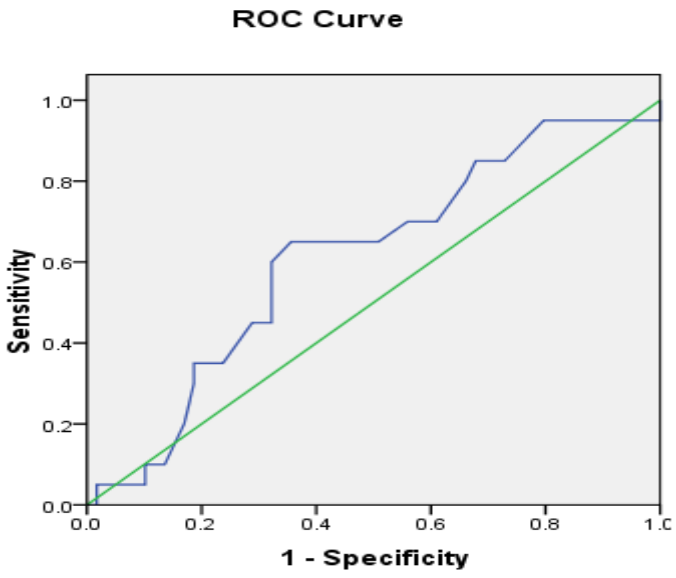


Figure 3. Antisocial Personality Disorder symptoms ROC

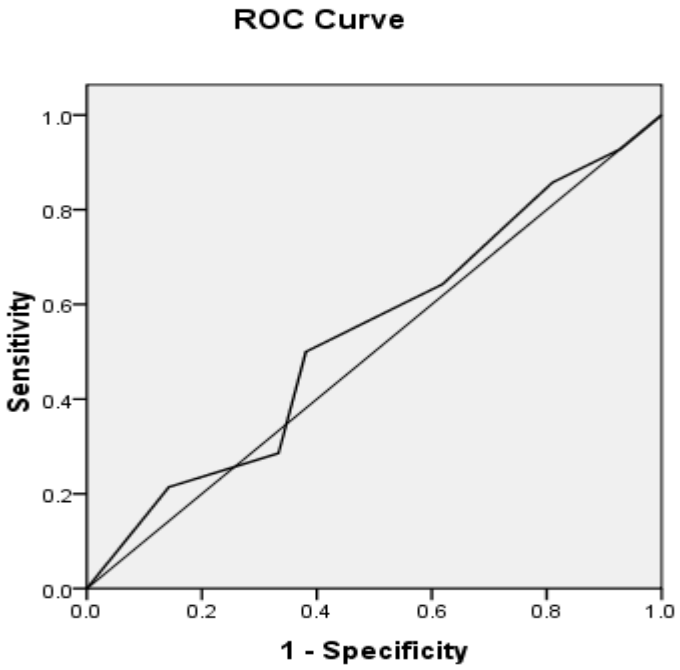


Figure 4. PCL-R ROC

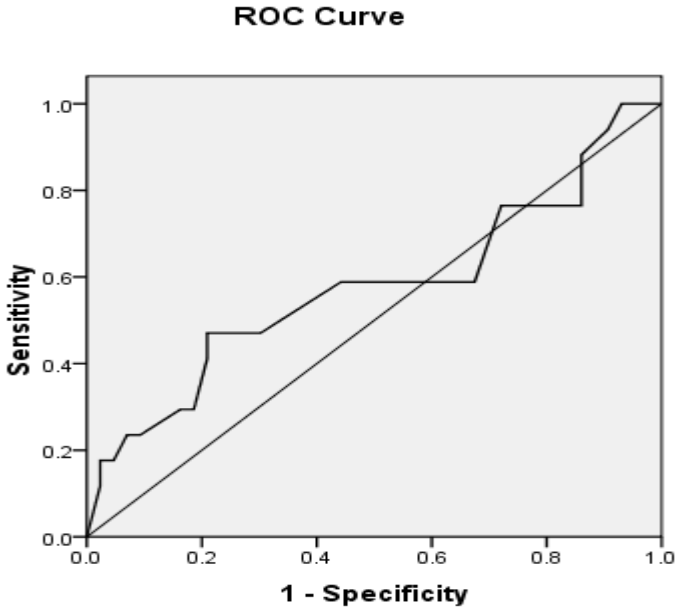


Figure 5. Borderline Personality Disorder symptoms ROC

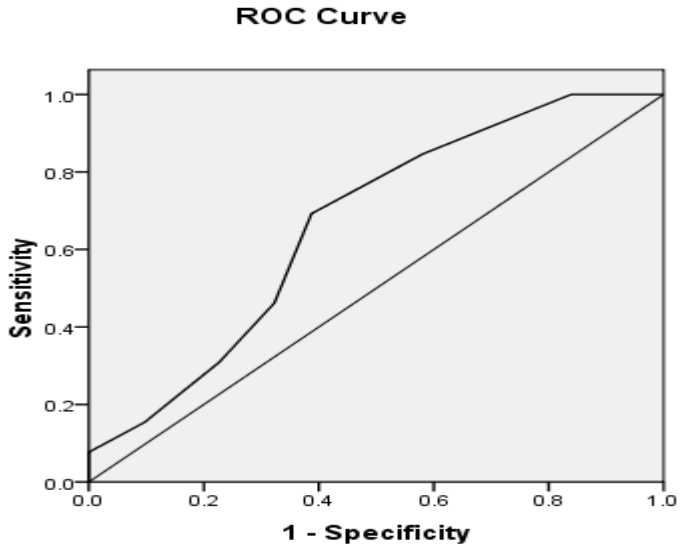
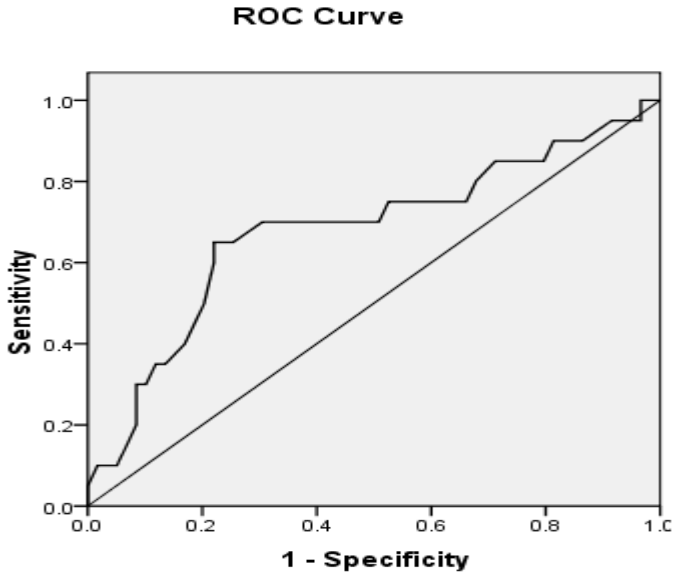


Figure 6. PAI Borderline Features ROC



Discussion

The purpose of the current study was to examine the prediction of violent behavior using measures of borderline, antisocial, and psychopathic personality pathology. Violence was measured by the PVI over a 1-year period. It was originally hypothesized that personality pathology, as measured by personality disorder symptoms and PCL-R scores, would result in violence prediction. However, due to the low correlations between variables once age was accounted for, regression analyses were deemed ineffective in determining whether increased pathology would predict violence. Therefore, analyses were instead run to identify whether each measure (Borderline and Antisocial Personality Disorder DSM-IV-TR criteria, PAI Borderline and Antisocial Features scales, PCL-R) could accurately classify cases of violence. This change to the study was presumed to produce the most useful results possible. Descriptive information was also gathered to provide prevalence and comorbidity rates.

Review of Findings

Prevalence rates of Borderline Personality Disorder and psychopathy were fairly low in this sample (13% and 11%, respectively) when compared with other studies (24 – 55% and 15 -32%, respectively; Black et al., 2007; Burnette & Newman, 2005; Jackson et al., 2002; Warren & South, 2006). However, the prevalence rate for Antisocial Personality Disorder (31%) was within a range found in a similar study (33%; Trestman, Ford, Zhang, & Wiesbrock, 2007). The comorbidity rate for Antisocial and Borderline Personality Disorders was also within a range supported by prior empirical analysis (9%; Howard, Huband, Duggan, & Mannion, 2008), with 5% of the current sample meeting

criteria for both disorders. Further, there were significant positive relationships between all personality variables (number of Borderline and Antisocial Personality Disorder symptoms, total PCL-R score, PAI Antisocial and Borderline Features *t*-scores), excluding borderline pathology (assessed through the PAI and through *DSM-IV-TR* symptoms) and Antisocial Personality Disorder symptoms, which were not significantly correlated. As previously noted, there are many similar characteristics of both Antisocial and Borderline Personality Disorders, including impulsivity and self-harm (Casillas & Clark, 2002), manipulation and anger (APA, 2000), and implicit reactions to stress (Lobbestael & Arntz, 2010). In fact, research has shown that clinicians frequently diagnose Borderline Personality Disorder in female clients who actually present with antisocial pathology, suggesting that there is a reasonable amount of observed similarity between disorders (Crosby & Sprock, 2004). Further, the findings from this study showed that antisocial and borderline pathology, as measured by the PAI, were significantly correlated. Therefore, the finding that borderline pathology and Antisocial Personality Disorder *DSM-IV-TR* symptoms were not significantly related is contrary to what would be expected.

There was a moderate significant correlation between the Borderline Personality Disorder *DSM-IV-TR* symptoms and the PAI Borderline Features scale, as well as moderate significant correlations between Borderline Personality Disorder *DSM-IV-TR* symptoms, the PAI Borderline Features scale, and the PCL-R. These results suggest that levels of borderline symptomatology within this sample were consistent across tests administered. Further, these results indicate that borderline pathology (assessed either with *DSM-IV-TR* criteria or with the PAI) is significantly and positively related to

psychopathy in this female sample. As previously noted, the interpersonal and affective components of psychopathy are more useful in accurate psychopathy identification in female populations (Bolt, Hare, Vitale, & Newman, 2004), whereas borderline pathology is frequently characterized by affective dysregulation and interpersonal functioning deficits (APA, 2000). Therefore, the results from the current study suggest that the emotional and affective components of psychopathy are somewhat related to the difficulties experienced by individuals with borderline pathology, despite theoretical differences between the disorders. Although these results are consistent with theories of primary and secondary psychopathy pathways (Skeem, Poythress, Edens, Lilienfeld, & Cale, 2003), it is apparent that there is still much to be learned about personality functioning among female populations.

An exploration of descriptive information suggests that there were overall low to moderate levels of self-reported violence among this sample, with 25% of the sample reporting having engaged in at least one violent act during the 1-year period. The base rate of violence in this sample was similar to that of another study involving female inmates (24%; Warren et al., 2005) in which violence data were collected from prison records as opposed to self-report. Although there may be a small advantage to using self-report to collect violence perpetration data, both the present study and the Warren et al. study revealed lower base rates of violence than would be expected among an inmate population. It is unclear if these findings were due to underreporting among female participants, high attrition, first-time inmate status, or other factors. Despite the reason for this base rate, the findings suggest that the best method of collecting accurate data on institutional violence among female inmates is not yet fully understood.

Again, due to insignificant correlations between violence and the personality variables once age was accounted for, ROC analyses were conducted. There was a significant correlation between the PCL-R and violence prior to accounting for the controlling effect of age, which suggests that psychopathy may identify higher degrees of violence, as opposed to the mere presence of violence. However, the results of the study do not show the PCL-R to be useful in discriminating between groups who do and do not engage in institutional violence. These findings are consistent with prior research on institution-documented violence and psychopathy (McDermott et al., 2007; Warren et al., 2005). The results also do not suggest that measures of antisocial pathology accurately discriminate between those who did or did not engage in institutional violence, whereas measures of borderline pathology did have moderate accuracy in discriminating between those who did or did not engage in institutional violence. These findings are both consistent and inconsistent with the results from the Warren et al. (2002) study, in which Antisocial and Borderline Personality Disorders were predictors of self-reported institutional violence among female inmates. These findings suggest that increased antisocial pathology cannot be consistently called upon as an accurate measure to discriminate between cases of self-reported institutional violence, whereas borderline pathology remains a fairly good measure across studies and psychopathy remains a fairly poor measure across studies.

Implications

The current study does not support the idea that antisocial or psychopathic personality pathology accurately discriminates between first-time female inmates who do

or do not engage in self-reported institutional violence. The antisocial and psychopathy findings are both consistent (Warren et al., 2005) and inconsistent (Warren et al., 2002) with previous studies, suggesting that antisocial and psychopathic personality constructs are not strong and consistent measure of institutional violence classification among female inmates. However, the current finding regarding borderline pathology is consistent with previous findings (Warren et al., 2002), suggesting borderline pathology is a fairly accurate and reliable measure of discriminating between those who do and those who do not engage in institutional violence. Results from the Warren et al. (2002) study revealed that Antisocial and Borderline Personality Disorders predicted self-reported institutional violence. Discrepancies between the current study and the Warren et al. 2002 study may be accounted for in part by differences in base rates of personality disorders, as Antisocial Personality Disorder rates were higher in the Warren et al. 2002 study than the current one. Further, demographic differences may account for some of the differences, as the Warren et al. 2002 study had a much larger sample size ($N = 261$ vs. 79 in the current study) and participants were recruited from a maximum-security setting, whereas the current study pulled from all security settings. Maximum-security inmates may have more charges/convictions in their criminal histories and may generally be more willing to engage in violence, thus resulting in higher rates of violence and more accuracy in predicting or identifying cases of violence. However, given that borderline pathology did remain a measure of violence classification in the current study, reasons for discrepancies among studies in regard to antisocial pathology is not fully understood.

Although the Warren et al. (2002) study did demonstrate significant findings between personality pathology and violence, Warren et al. (2005) found that psychopathy

did not predict institutional violence in a sample of female inmates. The latter study drew from the sample used in the former (2002) study, although the sample size was much smaller than the original study ($N = 132$). Similar to the present study, the Warren et al. (2005) study had a low to moderate base rate of violence (24%), which may account for the comparable findings despite differences in participant custody level. Larger samples with higher base rates of violence typically increase predictability of variables. Clinicians should be aware of the discrepancies between these studies, as well as factors such as sample size and base rates of violence that may account for these differences, before using personality characteristics to determine violence risk.

The findings of this study also highlight the variable prevalence rates of Borderline Personality Disorder and psychopathy among female inmates. The rates of these disorders in the present study were lower than rates in other studies. As mentioned in the literature review, many factors may account for this variability, including a clinician bias in diagnosis that is related to client gender. The rates may have also been lower in the current study due to the unique population of first-time inmates. There are several reasons why it is important for clinicians to remain aware of these variable prevalence rates and their theorized causes. For instance, misdiagnosis might result in inappropriate treatment interventions and an incorrect conceptualization of the individual. Further, results and recommendations from empirical studies will be misapplied in the case of an incorrect diagnosis.

Regarding institutional risk management, the results of this study highlight the importance of age and borderline pathology above and beyond psychopathy and Antisocial Personality Disorders in the classification of violence. Specifically, age was

found to negatively significantly correlate with violence, and once age was accounted for, no other variables were significantly correlated with violence. Age was also the only factor that predicted violence in the current study. This suggests that younger inmates are more likely to engage in violence. Further, when individuals present with antisocial or psychopathic pathology and engage in institutional violence, age must always be considered as a potential influencing factor above any influence that antisocial or psychopathic pathology may have. Although inmates with antisocial and psychopathic pathology might be identified as potential troublemakers due to the externalizing nature of their disorders, there is little evidence in this study to suggest that they are more prone to violence while incarcerated. This implication is equally as important for individuals conducting risk assessments on incarcerated females who display symptoms of personality pathology.

Strengths and Limitations of the Current Study

A primary strength of this research project was its focus on personality pathology and institutional violence in female inmates, areas of study that are frequently neglected by researchers. Whereas many studies have been conducted on general violence in women, and institutional violence among male inmates, very few researchers have melded the topics of female inmates and institutional violence together. Further, inmates in the current study were undergoing the intake process for their first prison incarceration. First-time inmates who have just arrived in prison are a different population than repeat offenders or those who have been incarcerated for a long period of time. Therefore, the methodology of this study allowed for a special population of female inmates to be examined. Additionally, self-report measures of violence were used in this study, whereas

many studies solely examine institutional records. As previously noted, self-report and institutional records may result in the gathering of different information. Due to these factors, it is clear that the self-report method of gathering violence data constitutes a unique approach to understanding the construct of violence. Another notable strength of this study involves the process of data collection. Self-reported violence data were collected at 3-month intervals over a 1-year period. This frequent data collection allows for any trends in violence at each interval to be explored, a strength that is not typically found in violence studies.

Although the results of this study did not fully support the proposed hypotheses, data taken from the study may be useful for clinicians. Borderline pathology was found to classify violence groups among measures, a finding consistent with prior research. This study also supported previous research in terms of age being a significant predictor of violence. Particularly, it highlighted the importance of age specifically in institutional violence. Because the results were both consistent and inconsistent with prior studies, the importance of understanding research differences is again demonstrated in the findings of the current study. Of note, this is instrumental when using research to guide clinical practice.

A primary limitation of this study was the high attrition rate of participants. While there were initially 150 participants, only slightly more than half (53%) completed all follow-up measures from the study. Although it is a strength that over half of the sample fully completed the follow-up period, it is unknown if participants who completed the study were fundamentally different from those who did not in areas other than sentence length. For example, participants who did not complete the study may have been more

violent than those who did complete, which could have resulted in higher base rates of violence and thus better violence prediction. The high attrition rate also resulted in lowered statistical power, thereby decreasing the chance of correctly confirming the hypotheses.

Other important limitations of this study include overall low to moderate base rates for violence and lack of significant relationships between violence and the criterion variables. Lower base rates result in decreased predictive power, whereas insignificant relationships infer no predictability among variables. Due to the low to moderate base rates of violence in this study and the lack of correlation between variables, alternate analyses had to be conducted. Thus, the findings are slightly different in scope than what was originally planned. Although this study followed participants for a 1-year period, a longer follow-up period may have resulted in more instances and types of violence (i.e., higher base rates) and perhaps more predictability among personality factors. Further, the numbers of separate violent episodes were not calculated for these analyses. Instead, total numbers of violence types were summed. It is unknown whether one episode of violence employed more than one type (e.g., both hitting and kicking), or whether the types occurred in two separate episodes. Knowing total number of violent acts may have provided additional clinical significance to the results.

Directions for Future Research

Future research should examine both self-report and institutional records of violence to determine whether the differences in how violence data are collected might result in different prediction rates. Although there were no differences in violence rates in the current study when compared with studies that solely included institutional records,

there is still far too little research in the area of institutional violence in female inmates to make any definitive statements about violence data collection methods.

In addition to examining different methods of violence data collection, it may also be beneficial to replicate this study using a longer follow-up period with a larger number of participants. As previously noted, this study and other studies have demonstrated low to moderate base rates of violence, which likely decreased the predictive power of the personality characteristics being measured. Using a longer follow-up period likely would allow for higher base rates of violence and would strengthen the results of any analysis, allowing researchers to identify additional characteristics that accurately predict violence. In order to use a longer follow-up period, future studies should also attempt to recruit more participants to account for inevitable attrition in sample size and should check in frequently (at 3- or 6-month intervals) in order to maximize the amount of useful data.

Finally, future research should also empirically examine the reasons for variability among prevalence rates of borderline and psychopathy personality characteristics among female inmates. There is far too much variability among prevalence rates to be accounted for by general differences in samples. More fully understanding this phenomenon would assist clinicians in more accurately providing diagnoses and thereby affording the knowledge and research that comes with diagnosis to their clients.

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Appendix A: Participant Consent Form

Informed Consent Form--Inmate

1. Study Title

Women's Adjustment to Prison

2. Study Personnel

	Principal Investigator	Project Coordinator	Research Assistant	Research Assistant
Name	Michelle R. Guyton, Ph.D.	Topher Brown, M.S.	Elizabeth Stotler-Turner, M.S.	Jessica Hinman, B.S.
Institution	Pacific University	Pacific University	Pacific University	Pacific University
Program	School of Professional Psychology	School of Professional Psychology	School of Professional Psychology	School of Professional Psychology
Email	--	--	--	--
Telephone	503-352-7277	503-352-7277	503-352-7277	503-352-7277
Signature				

3. Study Location and Dates

This study takes place at the Coffee Creek Correctional Facility in Wilsonville, Oregon. The study will run for 2 years, from fall 2008 to fall 2010.

4. Study Invitation and Purpose

You are invited to take part in this study because you are a woman who has been recently incarcerated in the Oregon Department of Corrections. We are interested in learning how women adjust to prison life during the first year of the prison sentence. Results of this study will help prisons learn about the growing female population of inmates and what happens to them when they first go to prison.

5. Study Materials and Procedures

If you choose to participate in this study, you will be asked to meet with a researcher twice to fill out questionnaires and be interviewed about your life. Each of these meetings will take about 90-120 minutes. After those meetings, we will mail you 3 short questionnaires every 3 months for the next year (4 times total) and ask you to complete them and send them in the mail to us. We will also ask an officer from your housing unit to fill out a questionnaire about you 2 times to get more information about how you are doing. We will also look at how many disciplinary infractions you get while you are in prison, and look at if you come back to prison once you are released.

6. Participant Characteristics and Exclusionary Criteria

Female inmates who are in prison for the first time are invited to be in the study. We are looking for women age 18 and older, who have completed their intake testing, and who are interested in being in the study.

7. Anticipated Risks and Steps Taken to Avoid Them

There are no physical or financial risks involved with being in the study. Some women may feel uncomfortable recalling parts of their past during the interview, and you can choose to take a break or end the interview at any time.

Because we will send questionnaires to you and ask that you mail them back, other inmates or officers may know that you are in the study. Some people may want to keep this private, so we ask that you not share the questionnaires with other people and put them in the mailbox as soon as you have completed them. Also, because we ask an officer to fill out a questionnaire 2 times about how you are doing in prison, this officer will know that you are part of the study. However, no information about you is given to the officer or the prison except that you are in the study. These officers will be asked not to talk about the study other than when they are filling out the questionnaires.

We take confidentiality very seriously and have several methods to protect your information and keep it private. We will not share your information with the prison, and prison officials have agreed not to ask us for that information. There is a very small risk that study paperwork could get lost or stolen, and someone might see it. However, the researchers keep all paperwork with them at all times and will transport the papers back to the University each day. We are using a special ID number for each person in the study, so that their information cannot be linked to them. For the follow-up questionnaires, they will be classified as “legal mail” and you will seal them shut before you send them so no one but the researchers can open them. Also, we are storing all information in a locked cabinet in a locked office at Pacific University, so only the researchers can access it.

8. Anticipated Direct Benefits to Participants

There are no direct benefits to participants in this study.

9. Clinical Alternatives (i.e., alternative to the proposed procedure) **that may be advantageous to participants**

Not applicable.

10. Participant Payment

When you have finished the two interview sessions and the 4 follow-up sessions, $10 will be placed on your inmate account by Pacific University. Participants must complete all baseline and follow-up sessions to receive the $10. Partial payment for partial participation is not available.

11. Medical Care and Compensation In the Event of Accidental Injury

During your participation in this project it is important to understand that you are not a Pacific University clinic patient or client, nor will you be receiving complete mental health care as a result of your participation in this study. If you are injured during your participation in this study and it is not due to negligence by Pacific University, the researchers, or any organization associated with the research, you should not expect to receive compensation or medical care from Pacific University, the researchers, or any organization associated with the study.

12. Adverse Event Reporting Plan

Any adverse event will be immediately reported to the Principal Investigator. If a participant needs immediate attention, a prison officer will be contacted and he or she will decide how to best help the participant.

13. Promise of Privacy

The researchers will keep your information confidential. The researchers will delete your name from all study materials at the end of the study, but will keep your SID number in a computer file that is password protected. This SID number will help us keep track of disciplinary infractions, when you leave prison, and if you come back. Only the researchers will have access to this computer file and will use it only to get information as listed above. All paperwork that you fill out and interview data will be entered into a computer where you will be known only by your study ID number. Once in the computer file, all paperwork will be shredded. This data file will be kept confidential so that even if someone other than the researchers saw it, they could not identify any person.

Results of this study may be published in a professional journal, but the data will be presented for the whole group of participants, and no one person's results could ever be identified.

14. Voluntary Nature of the Study

Your decision whether or not to participate will not affect your current or future relations with Pacific University or the Oregon Department of Corrections. If you decide to participate, you are free to not answer any question or withdraw at any time without prejudice or negative consequences. If you withdraw early and do not complete all the sessions, you will not receive the $10 payment. The researchers will not tell the prison about who participates and who does not, and will not tell who completes or does not complete the study. That is confidential.

15. Contacts and Questions

The researcher(s) will be happy to answer any questions you may have at any time during the course of the study. Complete contact information for the researchers is noted on the first page of this form. You may also send a kyte to the Jesse Lough, Psy.D., at Behavioral Health Services. Dr. Lough will give it to the researchers and we can respond to you then. If you are not satisfied with the answers you receive, please call Pacific University's Institutional Review Board, at (503) 352 – 2112 to discuss your questions or concerns further. All concerns and questions will be kept in confidence.

16. Consent Test

Please answer the following questions about what you have just read and what we have talked about.

_____1. The purpose of this study is to look at:
a. whether I used drugs in the community.
b. how well I adjust in prison.
c. the differences between male and female inmates.
d. whether a medication can help me feel better.

_____ 2. What will you be doing if you participate in this study?
a. having my blood drawn for some medical tests
b. learning a foreign language
c. filling out some questionnaires and taking part in an interview
d. running a mile every day

_____ 3. If I decide halfway through the study that I don't want to participate anymore, I
a. can leave the study and there will be no consequences
b. will be written up by correctional officers
c. will have to write a letter to the researchers explaining why
d. can't leave the study; I have to finish it no matter what.

_____ 4. If I finish the interview and all questionnaires, I will receive:
a. nothing
b. time off my sentence
c. extra yard time
d. $10

_____ 5. Information I give the researchers will be shared with:
a. correctional officers
b. medical and mental health staff
c. my friends and family
d. none of the above

17. Statement of Consent

I have read and understand the above. All my questions have been answered. I am 18 years of age or over and agree to participate in the study. I have been offered a copy of this form to keep for my records.

_____
Participant's Signature
Date

_____
Investigator's Signature
Date

18. Participant contact information

This contact information is required in case any issues arise with the study and participants need to be notified and/or to provide participants with the results of the study if they wish.

Would you like to have a summary of the results after the study is completed? ___Yes ____No

Participant's name: (Please Print) _____

Participant's SID number: _____

Street address: _____

Telephone: _____